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**Declaration under Rule 4.17:**

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)*

**Published:**

— *with international search report*  
— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(88) Date of publication of the international search report:

18 March 2004

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: DIAGNOSTICS AND THERAPEUTICS FOR DISEASES ASSOCIATED WITH NEUROPEPTIDE FF RECEPTOR 1 (NPFF1)

(57) Abstract: The invention provides a human NPFF1 which is associated with the hematological diseases, cardiovascular diseases, disorders of the peripheral and central nervous system, respiratory diseases like COPD and asthma and genito-urological disorders. The invention also provides assays for the identification of compounds useful in the treatment or prevention of hematological diseases, cardiovascular diseases, disorders of the peripheral and central nervous system, respiratory diseases like COPD and asthma and genito-urological disorders. The invention also features compounds which bind to and/or activate or inhibit the activity of NPFF1 as well as pharmaceutical compositions comprising such compounds.



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## INTERNATIONAL SEARCH REPORT

International Publication No

PCT/EP/02685

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G01N33/74 A61K38/00 C12Q1/68 A61K38/17

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C12Q A61K G01N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, BIOSIS, EMBASE

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>CA 2 269 192 A (ALLELIX BIOPHARMACEUTICALS INC.) 16 October 1999 (1999-10-16)</p> <p>page 31, paragraph 3; claims 10,11; examples 4,5,10,12</p> <p>----- -/--</p>	<p>1-8, 10-12, 14,16, 17, 19-21, 24-26</p>

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## \* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

7 November 2003

Date of mailing of the international search report

27. 01. 2004

Name and mailing address of the ISA

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Schalich, J

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 02685

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	LECRON J-C ET AL: "Modulation of human lymphocyte proliferation by FLFQPQRFamide, a FMRFamide-like peptide with anti-opiate properties" JOURNAL OF NEUROIMMUNOLOGY 1992 NETHERLANDS, vol. 38, no. 1-2, 1992, pages 1-8, XP008024125 ISSN: 0165-5728 the whole document	18-26
X	----- US 6 262 246 B1 (GERALD CHRISTOPHE P G ET AL) 17 July 2001 (2001-07-17) column 23 - column 29 column 38 - column 45 column 69 - column 70 -----	1-9, 11-26

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/EP 03/02685

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: -  
because they relate to subject matter not required to be searched by this Authority, namely:  
claims 2-3: Rule 39.1(iv) PCT - Method for treatment of the human or animal body by surgery  
claim 18: Rule 39.1(iv) PCT - Diagnostic method practised
2. ☒ Claims Nos.: -  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:  
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:  
1-26 (in part)

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.  
☐ No protest accompanied the payment of additional search fees.

## INTERNATIONAL SEARCH REPORT

International Application No. PCT/EP 03/02685

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.1

Claims Nos.: -

claims 2-3: Rule 39.1(iv) PCT - Method for treatment of the human or animal body by surgery

claim 18: Rule 39.1(iv) PCT - Diagnostic method practised on the human or animal body

claim 26: Rule 39.1(iv) PCT - Method for treatment of the human or animal body by therapy

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Continuation of Box I.2

Claims Nos.: -

Present claims 1-26 relate to diseases defined by reference to a characteristic or property, namely to involve the haematological system. Present claims 19, 20 and 24-26 furthermore relate to compounds defined by reference to a desired characteristic or property, namely to bind to or modulate the activity of the receptor for neuropeptide FF (NPFF1 receptor).

The claims cover all diseases and compounds having said characteristics or properties, whereas the application provides support within the meaning of Article 6 PCT and disclosure within the meaning of Article 5 PCT for only a very limited number of such diseases and compounds. Independent of the above reasoning, the claims also lack clarity (Article 6 PCT). An attempt is made to define the diseases and compounds by reference to a result to be achieved.

In the following arguments and objections the claims are therefore understood and interpreted as restricted to the following subject-matter:

haematological diseases referred to in claims 1-26: leukemias, lymphomas, myelomas, anaemias, haemorrhagic, eosinophilic and spleen disorders, leukopenias and plasma cell dyscrasias as defined on p 57 to 58.

compositions referred to in claims 19, 20 and 24-26: antibodies, ribozymes and antisense polynucleotides

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is

## INTERNATIONAL SEARCH REPORT

International Application No. PCT/JP 03 02685

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.5), should the problems which led to the Article 17(2) declaration be overcome.

## INTERNATIONAL SEARCH REPORT

International Application No. PCT/EP 03/02685

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: claims 1-26 (in part)

Therapeutic and diagnostic use of NPFF1 receptor for  
haematological diseases  
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2. claims: claims 1-26 (in part)

Therapeutic and diagnostic use of NPFF1 receptor for  
cardiovascular diseases  
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3. claims: claims 1-26 (in part)

Therapeutic and diagnostic use of NPFF1 receptor for  
disorders of the peripheral nervous system  
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4. claims: claims 1-26 (in part)

Therapeutic and diagnostic use of NPFF1 receptor for  
disorders of the central nervous system  
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5. claims: claims 1-26 (in part)

Therapeutic and diagnostic use of NPFF1 receptor for  
respiratory diseases  
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6. claims: claims 1-26 (in part)

Therapeutic and diagnostic use of NPFF1 receptor for  
genito-urinary diseases  
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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Publication No

PCT/EP/02685

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
CA 2269192	A	16-10-1999	CA 2269192 A1	16-10-1999
			US 2002111473 A1	15-08-2002
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US 6262246	B1	17-07-2001	AU 6164999 A	17-04-2000
			CA 2311462 A1	06-04-2000
			EP 1032423 A1	06-09-2000
			JP 2002525095 T	13-08-2002
			WO 0018438 A1	06-04-2000
			US 2002198367 A1	26-12-2002
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